WHAT IS CLAIMED IS:

1. A projection type image display apparatus comprising:

an electroluminescence element with three luminescent layers emitting three primary colors layered, each of the luminescent layers having emission pixels arranged in two-dimensional matrix form and emitting an image modulation pattern light including an intensity distribution of respective colors according to an input signal based on image information; and

a projection optical system that projects light emitted from the electroluminescence element onto an object and displays an additive color mixture image,

wherein said projection optical system has axial chromatic aberration in such a way that the positions of the plane of the luminescent layer and the plane of the object have an optically conjugate relationship at an emission intensity median point wavelength of a waveband of each of the colors.

2. The projection type image display apparatus according to claim 1, wherein the projection optical system has a telecentric characteristic on the electroluminescence element side.

3. The projection type image display apparatus according to claim 1, wherein the electroluminescence

element comprises three luminescent layers that emit three color beams of red, green and blue and the luminescent layers that emit blue, green and red beams are arranged in that order from an emission plane side of the electroluminescence element.

4. The projection type image display apparatus according to claim 1, wherein each of the luminescent layers is provided with an ITO (indium-tin oxide) transparent thin film electrode layer and hole transport layer at one side and an electron transport layer, transparent thin film metal layer and ITO transparent thin film electrode layer at the other side, a voltage is applied using the ITO transparent thin film electrode layer as a common potential electrode and charge carriers are injected to thereby emit light, and the transparent thin film metal layer is thinner than 10 nm.

5. The projection type image display apparatus according to claim 1, wherein the potential energy structure of a hole transport layer, luminescent layer and electron transport layer in which the luminescent layer is sandwiched between the hole transparent layer and the electron transparent layer, is a double-hetero structure.

6. An image display system comprising:

the projection type image display apparatus according to claim 1; and

a screen onto which the projection type image display apparatus projects an image,

wherein an image projected on the screen is recognized by an observer by means of diffused light that has been reflected by the screen and has predetermined directivity.

7. An image display system comprising:

the projection type image display apparatus according to claim 1; and

a screen onto which the projection type image display apparatus projects an image,

wherein an image projected on the screen is recognized by an observer by means of diffused light that has been transmitted through the screen and has predetermined directivity.

8. A projection type image display apparatus comprising:

an electroluminescence element having a plurality of pixels that can be modulated separately;

a projection optical system that projects light emitted from the pixels in the electroluminescence element onto an object to display an image;

a sensor that detects brightness of ambient light that illuminates the object; and

a controller that controls brightness of light emissions of the electroluminescence element based on the brightness detected by the sensor.

9. The projection type image display apparatus according to claim 8, wherein the controller reduces overall maximum brightness of light emissions of the electroluminescence element in such a way that the amount of light projected onto the object is reduced as the brightness detected by the sensor decreases.

10. The projection type image display apparatus according to claim 8, wherein the controller corrects a distribution of maximum brightness of light emissions of each pixel of the electroluminescence element so that the amount of light projected onto the object is distributed uniformly in the entire projection area as the brightness detected by the sensor decreases.

11. The projection type image display apparatus according to claim 9, wherein the controller controls the overall maximum brightness of light emissions of the electroluminescence element by modulating a peak current value or a current pulse time width supplied to the electroluminescence element.

12. The projection type image display apparatus according to claim 10, wherein the controller corrects the distribution of the maximum brightness of light emissions of each of the pixels by modulating a current pulse time width or peak current value supplied to each pixel of the electroluminescence element.

13. The projection type image display apparatus according to claim 8, wherein the electroluminescence element comprises emission pixels of three primary colors arranged in repetitive matrix form and displays an additive color mixture image.

14. The projection type image display apparatus according to claim 8, further comprising:

the three electroluminescence elements that emit three primary colors respectively; and

a wavelength-combining element provided with a dichroic waveband separating film for combining color beams emitted from the three electroluminescence elements,

wherein the light combined by the wavelength-combining element is projected onto the object through the projection lens to display an additive color mixture image.

15. The projection type image display apparatus according to claim 8, wherein, in the electroluminescence element, excitons are formed by injecting charge carriers into a luminescent layer having a material including an organic fluorescent material, and modulation pixels that emit light by recombination of the excitons are arranged two-dimensionally.

16. The projection type image display apparatus according to claim 15, wherein a resonance structure of photons generated is formed of a charge carrier injection electrode film and a light reflecting film provided on the outer surface of the electrode film in the electroluminescence element.

17. An image display system comprising:

the projection type image display apparatus according to claim 8; and

a screen onto which the projection type image display apparatus projects an image,

wherein an image projected on the screen is recognized by an observer by means of diffused light that has been reflected by the screen and has predetermined directivity.

18. An image display system comprising:

the projection type image display apparatus according to claim 8; and

a screen onto which the projection type image display apparatus projects an image,

wherein an image projected on the screen is recognized by an observer by means of diffused light that has been transmitted through the screen and has predetermined directivity.